

## **IN THE CLAIMS:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-44 (cancelled).

**45.** (currently amended) A slide system for microscopy, comprising:

a slide base;

a cover slip;

an adhesive layer on a surface of at least one of said slide base and said cover slip, said adhesive layer surrounding a portion of said surface such that when said slide base and cover slip are engaged with said adhesive layer to form an assembled slide, said adhesive layer and said cover slip enclose and define a sealed sample area; and

wherein at least one of said slide base and said cover slip includes, collectively, at least two electrical conductors, each conductor extending between said sealed sample area and a surface ~~on~~ of at least one of said slide base and said cover slip outside said sealed sample area; and

an insulating layer within said sealed sample area for preventing any physical contact between said conductors and a sample disposed in said sealed sample area.

**46.** (previously presented) A slide system according to claim 45, wherein one of said at least two conductors is on said slide base and the other of said at least two conductors is on said cover slip.

**47.** (cancelled).

**48.** (currently amended) A slide system according to ~~claim 4~~ claim 45, wherein at least one of said conductors is sufficiently resistive to heat said sample area.

**49.** (previously presented) A slide system according to claim 45, further comprising a dielectric coating on said conductors within said sealed sample area.

**50.** (previously presented) A slide system according to claim 45, further comprising a biologically inert coating on said conductors within said sealed sample area.

51. (previously presented) A slide system according to claim 45, further comprising a chemically inert coating on said conductors within said sealed sample area.

52. (currently amended) A slide system for microscopy, comprising:  
a slide base;  
a cover slip;  
an adhesive layer on a surface of at least one of said slide base and said cover slip, said adhesive layer surrounding a portion of said surface such that when said slide base and cover slip are engaged with said adhesive layer to form an assembled slide, said adhesive layer and said cover slip enclose and define a sealed sample area;  
wherein at least one of said slide base and said cover slip includes an electrical conductor ~~in~~ extending continuously through or under said sealed sample area and having at least two ~~portions of said conductor extending~~ electrical contact points on opposite ends of said conductor located outside of said sealed sample area.

53. (currently amended) A slide system according to claim 52, further comprising an ~~insulating coating on said conductor~~ layer within said sealed sample area for preventing any electrical physical contact with any sample between said conductor and a sample disposed in said sealed sample area.

54. (previously presented) A slide system according to claim 52, wherein said conductor is sufficiently resistive to heat said sample area.

55. (previously presented) A slide system according to claim 52, further comprising a dielectric coating on said conductor within said sealed sample area.

56. (previously presented) A slide system according to claim 52, further comprising a biologically inert coating on said conductor within said sealed sample area.

57. (previously presented) A slide system according to claim 56, further comprising a chemically inert coating on said conductor within said sealed sample area.

58. (currently amended) Apparatus for use with a microscope, comprising:  
a slide base having a sample area defined by a surrounding barrier;  
at least one electrical conductor, integrated with the slide base, which traverses continuously through or under the sample area and has at least two electrical contacts located outside of the sample area.
59. (previously presented) Apparatus according to claim 58, wherein the at least one electrical conductor is disposed underneath the barrier.
60. (previously presented) Apparatus according to claim 59, wherein at least one aspect of the surrounding barrier is an adhesive and including a cover slip sized for mounting over the barrier to cover and seal the sample area.
61. (previously presented) Apparatus according to claim 58, further comprising an insulating coating over the at least one conductor within the sample area preventing any electrical contact with any sample.
62. (previously presented) Apparatus according to claim 58, wherein the at least one conductor is sufficiently resistive to heat the sample area.
63. (previously presented) Apparatus according to claim 58, further comprising a dielectric coating on the at least one conductor within the sample area.
64. (previously presented) Apparatus according to claim 58, further comprising a biologically inert coating on the at least one conductor within the sample area.
65. (previously presented) Apparatus according to claim 58, further comprising a chemically inert coating on the at least one conductor within the sample area.
66. (currently amended) Apparatus for use with a microscope, comprising:  
a slide base;  
a cover slip;  
a barrier formed on a surface of at least one of the slide base and the cover slip, the barrier surrounding a portion of the surface such that when the slide base and cover

slip are engaged with the barrier to form an assembled slide, the barrier defines a sample area;

at least one electrical conductor, integrated with the slide base or the cover slip, which traverses continuously through or under the sample area and has at least two electrical contacts located outside of the sample area.

**67.** (previously presented) Apparatus according to claim 66, wherein the barrier is an adhesive layer.

**68.** (withdrawn) Apparatus for use with a microscope, comprising:  
a slide base having a sample area defined by a surrounding barrier;  
an electrical conductor disposed under the sample area; and  
an electric circuit component disposed underneath the sample area and connected to the electrical conductor.

**69.** (withdrawn) Apparatus according to claim 68, wherein the electric circuit component is an acoustic transducer in acoustic contact with the sample area.

**70.** (withdrawn) Apparatus according to claim 68, wherein the electric circuit component is a piezoelectric transducer in acoustic contact with the sample area.

**71.** (withdrawn) Apparatus according to claim 68, wherein the electric circuit component is a light source.

**72.** (withdrawn) Apparatus according to claim 71, wherein the light source is a light emitting diode.

**73.** (withdrawn) Apparatus according to claim 72, wherein the light source is a semiconductor laser.

**74.** (newly added) Apparatus according to claim 66, further comprising an insulating layer within said sealed sample area for preventing any physical contact between said conductor and a sample disposed in said sealed sample area.